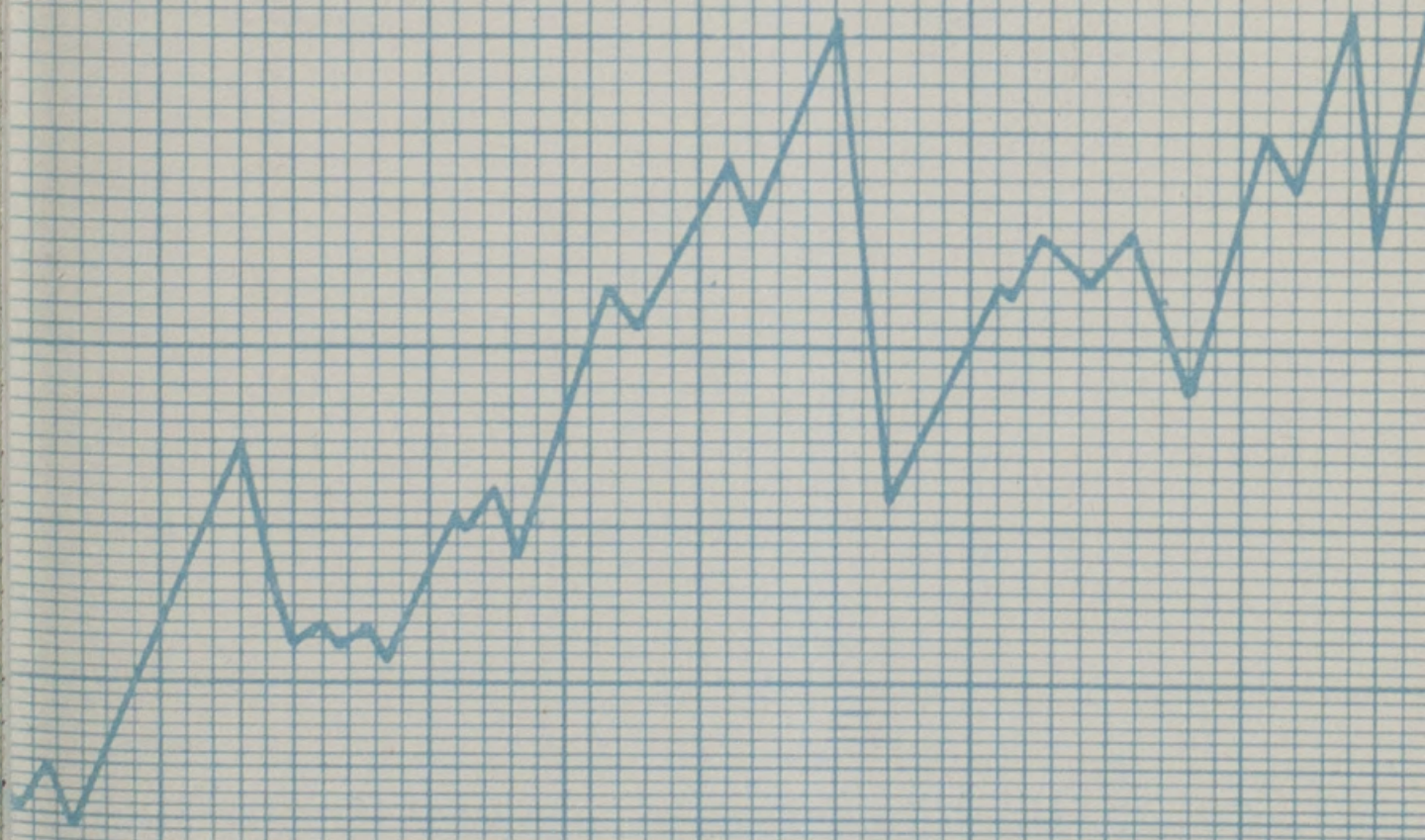
FALL 1965

MONTANA BUSINESS QUARTERLY



BUREAU OF BUSINESS AND ECONOMIC RESEARCH
SCHOOL OF BUSINESS ADMINISTRATION
UNIVERSITY OF MONTANA, MISSOULA

MONTANA BUSINESS QUARTERLY

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VOLUME 3
NUMBER 4

Published quarterly by the

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
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Subscriptions, $4.00 per year; single copy price, $1.00.

Entered as second-class matter March 3, 1949, at the Post Office at Missoula, Montana, under the Act of August 24, 1912.

In This Issue

About the Authors

Dr. Jack J. Kempner has written two articles for this issue of the *Quarterly*. The first, a discussion of graduate work in business at the University of Montana, appears as a guest article under *Director's Desk;* the second, a paper dealing with the development of accounting principles, begins on page 23. Dr. Kempner is professor of business administration and director of graduate studies in business administration at the University of Montana. He is a certified public accountant and is currently a member of the board of directors and treasurer of the Montana Society of CPAs. He is also a member of the American Institute of CPAs and the American Accounting Association.

Professor Kempner did his graduate work at the University of Colorado, where he received his M.S. degree, and at The Ohio State University, where he earned his Ph.D. Before coming to Montana, he taught at the University of Colorado, The Ohio State University, and California Western University. Recently, he returned from a two-year leave of absence spent as a member of a Michigan State University team of educational technicians in Brazil. During this time he was engaged in developing a graduate school of business in Sao Paulo.

Dr. Kempner has contributed other articles to the *Quarterly* and its predecessor, the *Montana Business Review,* as well as to various professional journals.

The article on business simulation was co-authored by Dr. Lawrence J. Hunt and Mr. Walter L. Brown, Jr. Dr. Hunt is assistant professor of business administration at the University of Montana. He received his M.S. degree in retailing from New York University and his D.B.A. from the University of Oregon. He joined the University of Montana faculty in 1964 after previous teaching experience at The Ohio State University and the University of Oregon. He is a member of the American Marketing Association and a past member of the Producers Council in San Francisco.

Dr. Hunt's extensive business experience includes work with R. H. Macy's in New York and San Francisco, and with Montgomery Ward, the Sandura Company, the Mastic Tile Corpora-

tion of America and the Ruberoid Company. He has also served as the southwestern correspondent for a trade paper and has done a considerable amount of free-lance writing. His articles and short stories have appeared in popular magazines and he has published four juvenile novels. Professor Hunt is listed in Contemporary Authors and has been nominated for membership in the Authors Guild and the Mystery Writers of America.

Mr. Walter L. Brown, Jr., is a member of the staff of the Missoula Chamber of Commerce. He has a B.S. degree from Tri-State College in Angola, Indiana, and is doing graduate work in management in the School of Business Administration, University of Montana. He is especially interested in management simulation as an educational and training tool at the university level and in industry. Mr. Brown's previous experience includes work with wholesaling and manufacturing firms in the Midwest.

Dr. John H. Wicks continues his series of articles on state and local taxes in this issue. Dr. Wicks is assistant professor of economics at the University. In the summer issue of the *Quarterly* he discussed increases in state and local taxation. Information about Professor Wicks appeared in the Spring 1965 issue.

Maxine C. Johnson is the Assistant Director of the Bureau of Business and Economic Research and a frequent contributor to the *Quarterly*.

From the Director's Desk . . .

Dr. Jack J. Kempner, professor of business administration and director of graduate studies, has written the following description of graduate work in business administration at the University of Montana.

Graduate Study in Business Administration at the University of Montana

For the past several years the School of Business Administration has been conferring a limited number of conventional Master of Science degrees to qualified candidates in business administration. The increasing complexity of corporate enterprise, coupled with the demand for more highly trained managers, has emphasized the need for more comprehensive study in business at the graduate level. To meet this demand the university has expanded its graduate program in business by offering the Master of Business Administration degree, beginning with the autumn quarter of this year. There are 15 students now enrolled under this new program, and there is every reason to believe that the number of candidates will grow considerably over the next few years.

Students may still elect to work toward the Master of Science degree, but it is more than likely that in the future the great majority will prefer the MBA. This is a relatively new degree when compared to the more traditional Master of Science, but the MBA has been making considerable inroads over the last fifteen to twenty years. Today about sixty to seventy accredited schools of business in the nation offer such a degree so that its reputation as a vehicle for graduate training in business is fairly well established.

The essential characteristics of the MBA degree can best be distinguished by contrasting it with the more familiar MS degree. Ordinarily the Master of Science has been chosen by those students who have already had four years of undergraduate education in business. The additional year of graduate work permitted further specialization in some discipline, such

as accounting, finance, marketing, etc., coupled with extensive research (including a thesis) in the candidate's chosen field. Frequently this degree has been looked upon as a preliminary training ground for those students going on to a doctorate with an eventual career in the academic world. Little provision is made in the MS curriculum for those people who have had no previous training in business nor for those individuals who wish to terminate their formal education at the master's level. There is still a definite need for this type of degree, however, and it will continue to be available for those who desire it.

The MBA program, on the other hand, is looked upon as a terminal degree and is specifically designed for students who wish to seek careers in industry or government immediately after graduation. More often than not, these young men and women will hold a bachelor's degree in some area other than business administration—possibly in the liberal arts, engineering, or one of the physical sciences. Many professional educators and corporate executives agree that four years of undergraduate work in the liberal arts combined with one or two additional years of graduate study in business make for a very excellent background. Of course students who already have a bachelor's degree in business can also matriculate for the MBA and may expect to complete the requirements in one year instead of two.

The program as it has been designed here at the University of Montana and as it has been organized at similar institutions does not permit any high degree of specialization; instead it requires exposure in all areas of business and economics. The primary objective is to equip graduates for managerial careers with very little emphasis devoted to training for that "first job." Such training can more adequately be developed by the individual's first employer. The graduate faculty of the University of Montana's School of Business is strongly convinced that its job is to teach these candidates how to think and how to adapt themselves to the ever-changing pattern of the business environment. A graduate of the MBA program should be prepared to cope with managerial problems ten years from now, and it is believed that the major objective of the curriculum is to offer students a broad background in business administration with emphasis on the ability to think and to make

logical decisions. Although the MBA degree is not as heavily research-oriented as the MS, the candidate will still be required to prepare two professional papers and will be expected to do a certain amount of independent writing in connection with his regular courses. A fair amount of research and practice in written communication is certainly essential for a successful career in management.

All courses offered to MBA candidates are restricted to graduate students. Excluding undergraduates from these courses raises the caliber of academic instruction. Classes are small, usually below twenty students, and each individual is challenged to perform at his or her highest potential. During the first year, candidates with nonbusiness undergraduate degrees will concentrate on the fundamental aspects of business and economics with considerable emphasis on the quantitative tools and analyses employed in modern management. Candidates with a bachelor's degree in business or its equivalent will enter the second year of the program along with students from other disciplines who have just completed their initial year. Heavy emphasis is placed on the needs of management for people who can make decisions which take into consideration the national and international nature of the economic, social, and business environment in which corporate enterprise functions. A limited amount of concentration in the student's field of special interest is provided during this second year through the device of seminars in specific areas of study and by requiring the preparation of two professional papers.

The graduate faculty of the University of Montana's School of Business has spent considerable time and effort in devising the curriculum for the MBA degree and feels confident that it is designed to meet the needs of those people who are intellectually and emotionally fitted for careers in top management. While certain revisions in the program will no doubt have to be made in the future, if for no other reason than to keep abreast of the dynamic changes that will occur in the science of business management, the inauguration of the MBA represents a significant milestone for the School of Business Administration. A decisive step has been taken to help prepare qualified people in Montana and the surrounding area for responsible business leadership.

Business Simulation— A Technique for Updating Management

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Missoula Chamber of Commerce

Management Dilemma and Business Simulation

In the present automation controversy the emphasis has been primarily on the effect it has on labor—the impact it is having on management has been little publicized. Even here, in the relatively nonindustrial state of Montana, automation has made itself felt, and as a result management men are searching for new ways to better prepare themselves to cope with the technology of our time.

In today's fast moving business world some executives still delegate many routine and repetitive decisions but science and time have proven that many lower management jobs can be more efficiently handled by computers, and it appears that a good many of the decisions now made by middle management will in the future be taken over by the "machine." While many consider this to be the era of specialization, the job of the manager is in many ways growing in scope and complexity. If management is to stay ahead of obsolescence new decision skills must be developed that are compatible with the required insight into new, varied, and complex problems which are constantly arising from within the firm, the business community, and the surrounding social environment. Not only must executives be decision-making specialists in their own field, they must at the same time maintain a broad overview of the firm while making decisions faster, based on second-hand information.

In an effort to meet this challenge of computers and computerized systems, businessmen on all executive levels are

looking for new ways to sharpen and update their decision-making skills. One of the tools which can develop these needed abilities is business simulation.

Simulation Design

Business simulation may be defined as an exercise in sequential decision making that utilizes a model of business operations to provide participants the opportunity to manage a simulated business firm in a competitive situation.[1] The design of the management simulated game should first take into consideration the particular industrial and economic environment of the simulated industry. Such factors as the type of product produced and sold (if a particular product is defined), the number of firms, the functional areas of management involved, the decisions to be made and the information furnished the participants must be decided upon. Out of this information a mathematical model can be developed so the game may be computerized. The mathematical model is nothing more than a set of relationships which, when programmed for a computer, transforms input information (decisions made by the players) into the output information (results "printed out" by the computer); these results in turn form the basis for the next decisions. Programming a model for the computer consists of translating it into one of the "languages" such as FORTRAN that can in turn be automatically converted or "compiled" into machine language by the computer. Compiling is a mechanical intermediate step that is necessary because most computers cannot accept instructions directly from a written program. Compiling is necessary only once prior to the running of the game—thereafter the model is "read" into the computer where it is stored in memory cores until called upon.

Once these steps have been completed the game is ready to

[1]It might be well to note that academically, business gaming is a problem-oriented educational tool. Games are not used in place of such methods as case study or the incident process but rather to broaden the range of teaching aids that are available to educators and businessmen. The terms *business simulation, management game, business game,* and others are often used interchangeably.

be run. The decisions which the players make are fed into the computer; the data is evaluated and the results are developed and then "printed out" by the computer. The results demonstrate "good" and "bad" decisions made by the executives who are guiding the financial success of the simulated company. These results point out errors of judgment which might cost a real company thousands of dollars.

Background of Today's Computerized Games

The 18th century Chess games simulated military strategy with kings, queens, knights, and so forth; this is probably the embryo of the management game as we know it today. Since then the military has made extensive use of more advanced war games, such as the map maneuvers used by the Germans in preparation for World Wars I and II, and most recently the U.S. Navy Electronic Warfare Simulation (NEWS) that is installed at the Naval War College at Newport, Rhode Island.[2] During World War II the Link Trainer simulated reality without danger, and today, the military uses simulation to prepare astronauts for their flight into space. While business simulation for management training is quite new, role playing, operations research, and the case method have been used to develop the central concept of the current computerized management games.

Probably the first practical business simulation game is the one developed by the American Management Association in 1957—the IBM Management Decision-Making Laboratory—a game that takes into account the total business enterprise. Today games can be programmed to focus attention on specialized areas such as financial management, investments, production, and retail management; in fact, nearly all facets of business operation have found some application in business simulation.

But these games, as they are constructed and played today, would not have been possible without the computer. Contrary to what many may believe, the idea of a computer is not new: as early as 1834 an Englishman, Charles Babbage, had

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[2]Kibbee, Craft, & Nanus, *Management Games*, Reinhold Publishing Corp., 1961, p. 6.

invented a steam driven "Analytical Engine" that had nearly all the essential elements of a modern digital computer. However, it was not until 1944 that a Harvard professor invented the first true computer—the Mark 1. In 1957 there were fewer than 100 computers in operation in the United States; today an estimated 22,500 computers are in use. It has been said that one of the larger major computers can make more calculations in one hour than a Yankee Stadium full of scientists could make in a man's lifetime.

The same comparison, to a lesser degree, applies to management games. The more complicated games that take 20 minutes to run on an IBM 1620 computer would take several months to compute by hand. William Dill, assistant dean of the Graduate School of Industrial Administration at Carnegie Institute of Technology, makes this statement about one of the current management games in use: "The Carnegie game requires about 45 minutes of time on an IBM 650 to generate one period's results for three teams in competition with one another. It would be impossible to run except by machine."[3]

Types of Games

The games that are in use today can best be described in terms of *total enterprise* versus *functional area* games, and *interacting* as opposed to *noninteracting* games. A total enterprise game may be either interacting or noninteracting, and the same could be true of the functional type. (To add one additional note, the simulation exercise can be either computerized or manually scored but because of the advantages connected with the computer versions, this article concentrates on the more advanced type.)

Total enterprise games are so called because they deal with all major areas of a business enterprise—that is, the players make the same decisions that a top executive of a company would be concerned with in the real business world.

Functional area games are involved with one aspect of a business firm such as production or marketing, and the ma-

[3]William R. Dill, "What Management Games Do Best," *Business Horizons,* Fall 1961.

jority of the decisions are of the type that a production or a marketing manager would make on a day-to-day basis.

In an *interacting* game, the decisions made by one firm in the industry have an effect on not only their own results but also help determine the effectiveness of the other teams' decisions—as in business where no company operates in a vacuum.

A *noninteracting,* or noncompetitive, game is largely self-explanatory—the decisions of one group have no effect on the results achieved by other teams.

Under either the total enterprise or the functional area game headings, some games may be of a generalized type: that is, they represent a purely hypothetical business operation—or they can simulate a particular problem of a firm or industry. A mixture of the various elements will be found in most games since no set pattern has evolved, but to play the game it is not necessary to analyze the game as to structure, only to understand the conditions as they apply in a particular case.

A Sampling of the Games in Use Today

Many business organizations are finding that games properly designed, and in some cases specifically tailored to their situations, can overcome a void in their training programs. In the past it was found that there was no single educational tool that would permit training a man for the broad range of decision-making responsibilities found in the average company.

Among the techniques that have been used in industry for training purposes are the in-basket problem, the incident process, and the case method. The in-basket problem presents the trainee with a hypothetical situation in which he assumes the role of a business executive and takes action on a dozen or more pieces of incoming mail in the form of memos, letters, and papers. The incident process involves the student in a single incident such as a work shut down where he is required to play the part of a plant superintendent working to solve the problem. The instructor initially reveals only the basic facts and it is up to the plant superintendent to ask questions that will supply the information necessary to arrive at a deci-

sion. The case method is probably the one best known to businessmen and it comes closest to resembling the complexity of management simulation. Several interrelated problems are set forth and the trainee attempts to solve them by applying analytical methods and accepted management principles. However, until now, two important aspects that would complete the training experience have been missing—competition, and the challenge of making decisions in a continually developing problem situation.

To dramatize the importance of relevant information in decision making as it applies to advertising expenditures, RCA uses its Marketing Decision Simulation to show the value of getting the correct information out of the myriad of facts available. Each simulated firm (a team made up of RCA executives) can spend up to one million dollars per round to become informed, and with 3 firms comprising up to 100 players each competing to sell three models of a consumer product in four regions, it is easy to imagine the keen competition that develops as these firms vie for their market share.

The Travelers' Insurance Company's Travelers Management Game simulates some of the problems involved in running a casualty company. Middle-management trainees practice the analysis of business data by making decisions on securities investment, investment in operating assets, marketing expenditure, rates, and so forth. A general management game that emphasizes the special characteristics of the auto industry has been developed by General Motors Corporation to train their upper-level manufacturing executives in the areas of production levels, price, advertising, research and development, labor utilization, and other automotive production problems.

To reproduce certain areas of top management decision making in financial institutions, McKinsey & Company's Bank Management Game pits the players against an economy of fluctuating interest rates rather than against each other. They make half a dozen decisions affecting bank assets in addition to resolving problems of reassigning officers, setting interest rates and service charges, maintaining compensating balances, as well as problems of advertising and management of bond portfolios.

The Management Decision Exercise used by the Pillsbury

Company has the unique feature of varying the prices of the company's stock. The price is determined by the corporate effectiveness and the price in turn helps to determine the firm's line of credit. Because the Lockheed Aircraft Corporation deals in high-priced products, their Top Management Decision Simulation Game features a single unidentified product with a price of over $100,000 that is sold competitively.

Not all industrial games are tied in so closely to a particular company's own operations, of course; some are of the general type.

The simulation games developed by the colleges and universities are used by industry as well as by the schools. These games are designed either for executive development or for students in residence, and they lean more toward a model of "general" business enterprise with an unnamed product and problems common to most business firms. One reason for this is that people with many different backgrounds may use the game, and a model geared to a particular product or situation would not afford the maximum learning experience to the majority of the participants. One college game that does define the product, however, is Carnegie Institute of Technology's Management Game that concerns three companies manufacturing packaged detergents for four marketing regions. This is one of the more complicated games where players may make as many as three hundred decisions in one period and may require a week of class sessions to reach decisions that represent one simulated month in the company's life.

One of the more popular games, as well as one of the oldest, is IBM's Management Decision-Making Laboratory; this is discussed in the following section which describes a typical game at the University of Montana. According to the University of Texas' *Survey on Business Games,* this game in both its 650 and 1620 computer versions has been used in more schools than any other to date. The UCLA Executive Game No. 2 (a total enterprise type) is rated second in popularity—it has been used in 14 colleges and universities throughout the country. The UCLA Game No. 3 is an expansion of the No. 2 game, allowing for decisions on three different models of the same product sold in a multi-sector market as opposed to one product in one market in the No. 2 version.

A functional game that has been used at the University of Montana with success is MARKSIM—a marketing decision simulation designed by Paul S. Greenlaw and Fred W. Kniffin of the Pennsylvania State University. MARKSIM features three firms in one industry competing for consumer sales with an unknown product. Because it is a marketing game, emphasis is given to the channels of distribution and the comparative cost of using them, as well as to other functions of the marketing manager such as market research and advertising.

The faculty of the University of Montana's School of Business Administration has been examining the advance manuscripts of two new games, FINANSIM—financial management —and PROSIM—production management, and are looking forward to seeing them in their completed form. Professor Greenlaw has said that both will follow "the MARKSIM pattern of discussing concepts and analytical tools and showing their specific application to decision making in the simulations." This is one of the noteworthy features of the "SIM" line of management games.

Another of the older total enterprise games is the University of Washington's Top Management Decision Game that has been used in executive and university classes since the summer of 1957. It was developed primarily for use by graduate students and is a "general" business game that places additional emphasis on providing the players with data on the business environment relevant to the conditions that are simulated.

Management Simulation at the University of Montana

"We had quite a few lost sales because of low inventories and were determined not to let it happen again." "We were too market-minded and thus failed to analyze the production capabilities of our competition as we did their advertising and share of the market." "We suddenly realized that we were paying too much attention to what our competitors were doing rather than working toward our own objectives." "We managed to learn from our mistakes—to remedy them, and to turn losses into profits."

These are not snatches of a conversation among executives; they are examples of critical self-analysis taken from team re-

ports prepared by University of Montana students analyzing their performance in a business simulation game.

One of the games in use in the School of Business Administration at the University of Montana is the IBM Management Decision-Making Laboratory that features a total enterprise situation and calls into play general business procedures. This game, used in conjunction with the senior Business Administration course, Administration and Business Policies, is structured around three firms competing for sales of an unknown product in four market areas in one industry. The teams are staffed with five players each and, depending upon the number of students, several independent industries may be set up to run concurrently.

During the course's four weekly meetings, one class meeting is set aside as the decision period in which each team formalizes its decisions and enters them on the decision forms. Between then and the time when the game is run in the computer center, a team member transfers the decisions from the form to IBM cards. After the results are obtained, part of a class period is set aside for a brief critique covering the industry summaries and general results. Only the industry results are analyzed and posted. With the individual company results remaining secret an aura of competition is maintained throughout the game.

The actual game play begins after an initial briefing session in which the instructor outlines the rules and limitations of the simulation exercise in terms of the individual companies and the business environment that the firms must operate in. The students are assigned to firms by the instructor; but each team must set up its own company organization and divide decision-making responsibility on an equitable basis in terms of pricing, marketing expenditures, production allocation, transportation costs, research and development, and plant investment. A typical organization structure, as shown on a chart, would feature a president and several vice-presidents or managers in charge of the various functions; but, as in business, this may or may not show the true division of responsibility. Some teams do operate on the basis of individual accountability but others may use an executive committee approach with each team member making recommendations in

his area of specialization and yielding to majority rule for the actual decision. The teams must also set their own company objectives and policies; and here again the policies are not unlike those found in the "real world"—to "make a profit and generate a good return on our investment," to "keep inventories at optimum level," to "establish ourselves as a reliable supplier to the market," and "to maintain our relative position in the total market area."

Students quite often do not appreciate until after several periods of play, that planning—both short-term and long-range—is another very important aspect of managing a successful company. They find that if they do not keep at least three or four periods ahead in their thinking (four periods simulate a year) they run into serious operating problems that make it impossible for them to realize their company goals (actually the teams that plan ahead two to three years have a distinct advantage over those that do not).

The administrator pre-runs the first period results ahead of time and gives them to the teams as a basis for making decisions in the second period. They include orders received, units sold, money spent for marketing, total sales in dollars, and delivered unit cost. Usually the teams start out in the game on common ground; but rarely, if ever, would two firms again find themselves in identical positions, because each competitor's results are influenced not only by its own decisions but also by those of the other teams. As play moves from one period to the next the participants become intensely aware of the competitive aspects of operating a business and highly alert to the value of sound policies in solving day-to-day problems in marketing, production, and finance. Players themselves have also reported that to know their own specialty is not enough—they must have an understanding of the other functions in the firm so that they can see their decision area in terms of the total enterprise. Thus the value of teamwork comes to mean more to the students than the area of their special interests. They have found, for example, that if they build up production facilities at the expense of needed marketing expenditures, the extra sales are not generated to make use of the added capacity; or, on the other hand, if too much is allocated for marketing, not enough money is available for production.

Some things are learned by observation or by discussion within the group; but when the facts are put down on paper in the form of charts and graphs that each team keeps on a continuing basis, the relationships between the various functions become more clear. Typical of the analyses that are used to aid decision making and to provide a record that will help spot weaknesses in strategy is profitability analysis where marginal revenue, cost and profit are charted for each period. Team records are kept on prices and their effect on sales and profit, and a "break-even" point is calculated to aid in the setting of prices. The teams plot graphs of net income as a percent of sales, and total assets; they also chart net income, production, quantity, unit costs, and research and development expenditures in relation to other variables. Keeping these records for their final report and in writing their decision/critique diary requires each student to crystalize the business principles and rules learned in his basic course work and to clarify abstract concepts. The final written report forces each student to appraise himself critically in terms of how well he succeeded in helping the firm reach its stated objectives.

During the spring quarter of 1965 a brief survey of the 74 students then involved in gaming was conducted in an attempt to measure the students' reactions to management simulation as an educational tool. Over 90 percent of the students stated that the exercise helped them to envision and comprehend the over-all picture of a business enterprise. Ninety-five percent found the games challenging and 97 percent said that they would like to play another simulation game.

Benefits of Management Simulation

Management simulation as a training device seems to offer several dividends. The ability to handle interpersonal relationships that evolve from team play and cooperation cannot be adequately judged from course work. The careful observer of simulation teams can determine much about the participants that would not be apparent except in a real business environment. In addition, basic intelligence, which counts highly in

academic course work, may not be a good predictor of success in game play, any more than superior brainpower is a guarantee of actual managerial success. The qualities that produce a good game player are as elusive as the qualities that make a good manager, although time may prove a correlation between "good in games—good in business."

In summary it could be said that the purpose of simulated games in general, and as they are utilized in the School of Business Administration at the University of Montana, is twofold. First of all, they simulate the challenges and problems that today's executives face, thus providing a realistic setting in which the player can develop and sharpen his decision-making skills; and, secondly, they provide for a better evaluation of the abilities and potentialities of those involved. Obviously it is important to develop better trained men for management positions, but it should be equally valuable to companies who employ University of Montana graduates that the staff be able to evaluate each student's potential precisely.

Games can be used to educate, to stimulate, to motivate, and to provide the participant with a feeling of awareness of areas outside his specialty. They can be used to evaluate performance, to change old habits and ways of doing things; and from the mechanical point of view, computerized games demonstrate the speed, accuracy, and usefulness of electronic data processing. And what perhaps is more important, computerized gaming demonstrates that the age of automation still needs the genius of man to make the actual decisions, for the conclusions arrived at by the computer are no better than the data fed into them.

Evolution of Generally Accepted Accounting Principles

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University of Montana, Missoula

Introduction

There is a great debate going on today both inside and outside the accounting profession concerning the soundness of generally acceptable principles of accounting. The outcome of this searching reappraisal should be of vital concern to accountants, consumers of financial statements, and management. All of these groups are involved and all of them will have some influence on whatever progress is to be made.

Various people have attempted to define principles—their contributions range from formalized dictionary definitions to laborious efforts to distinguish them from concepts, postulates, conventions, doctrines, rules, guidelines, *et al.* Rather than risk the danger of becoming hopelessly embroiled in semantics, such pitfalls might be avoided by emphasizing at the outset that the present discussion involves that fundamental body of knowledge upon which financial statements and accounting reports are based. Call them concepts or postulates if you like, they shall be referred to as principles.

It would perhaps be easier to deal with one of the physical sciences where principles evolve from the development of knowledge about the physical environment. Unfortunately, accounting and other so-called business sciences do not fit into this category. Principles of accounting are man-made and although they do evolve from the advancement of knowledge, they are vulnerable to all the biases and subjective opinions of man.

The current debate is concerned with such questions as the adequacy and soundness of presently accepted accounting principles. Has the development of these principles kept pace with

the rapidly changing business environment? Are these principles sound because they are used by the great majority of enterprises as a matter of common practice, or should they be forced to stand the test of logical reasoning? Are the financial statements, upon which so many depend, misleading, or are they relatively free of distortions? In recent years a great many informed individuals, both within and outside the accounting profession, have expressed dissatisfaction with that body of knowledge commonly referred to as generally accepted accounting principles.

The Attest Function

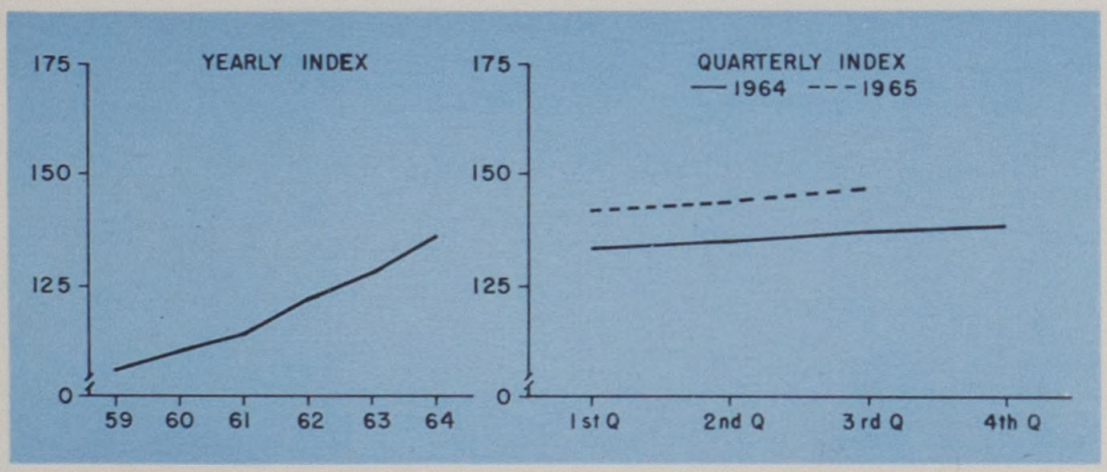
Financial statements which are prepared for internal use as well as those published for consumption by stockholders, bankers, investors, and others are representations of management. The courts, the Securities and Exchange Commission, and the stock exchanges have long since concluded that it is management's responsibility to maintain an adequate accounting system and to report on the financial results of its operations. In order to attest to management's stewardship of this function, however, the independent certified public accountant is often called in to submit his opinion as to the fairness of these financial statements. If you will recall the last or opinion paragraph of the certified public accountant's report, it is worded somewhat as follows: "In our opinion, the accompanying financial statements *present fairly* the financial position of the XYZ Corporation at December 31, 1964 and the results of their operations for the year then ended, *in conformity with generally accepted accounting principles. . . .*" (Italics supplied)

The uninitiated reader might reach the conclusion that these generally accepted principles are precise and rigid for all financial statements. Unfortunately, presently accepted principles contain many acceptable alternatives, even within firms of the same industry, and can be dangerously misleading to the unwary. Two criteria are therefore of paramount importance. (1) Since accounting principles are not subject to the laws of nature, there will inevitably be more than one acceptable alternative even though it is hoped that these alternatives can be confined within reasonable limits. (2) Those who depend upon

National Indicators —

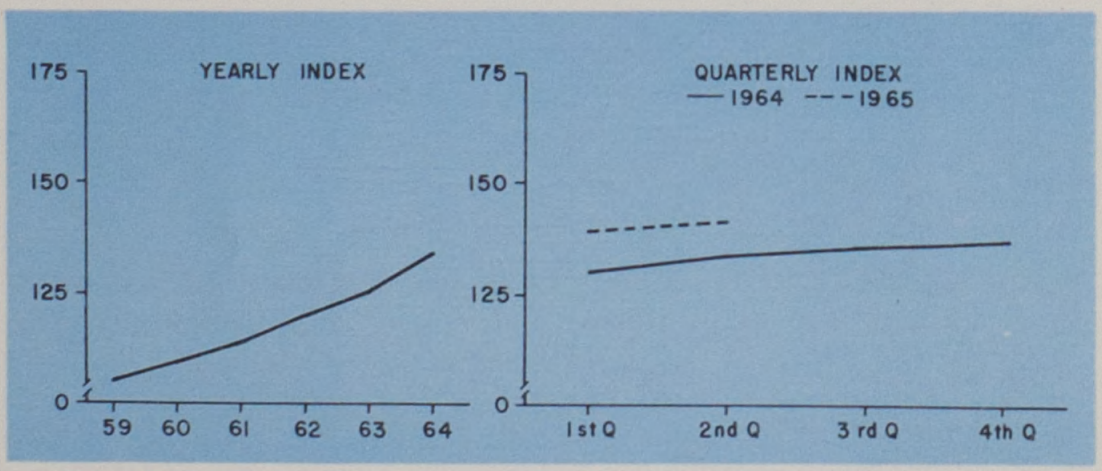
GROSS NATIONAL PRODUCT

1957-59 = 100 — Seasonally adjusted, annual rates



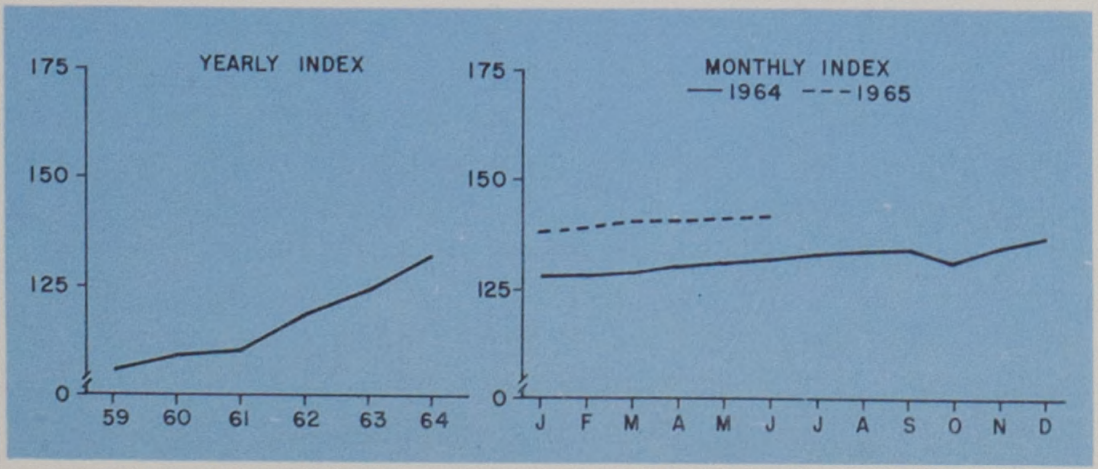
DISPOSABLE PERSONAL INCOME

1957-59 = 100 — Seasonally adjusted, annual rates



INDUSTRIAL PRODUCTION

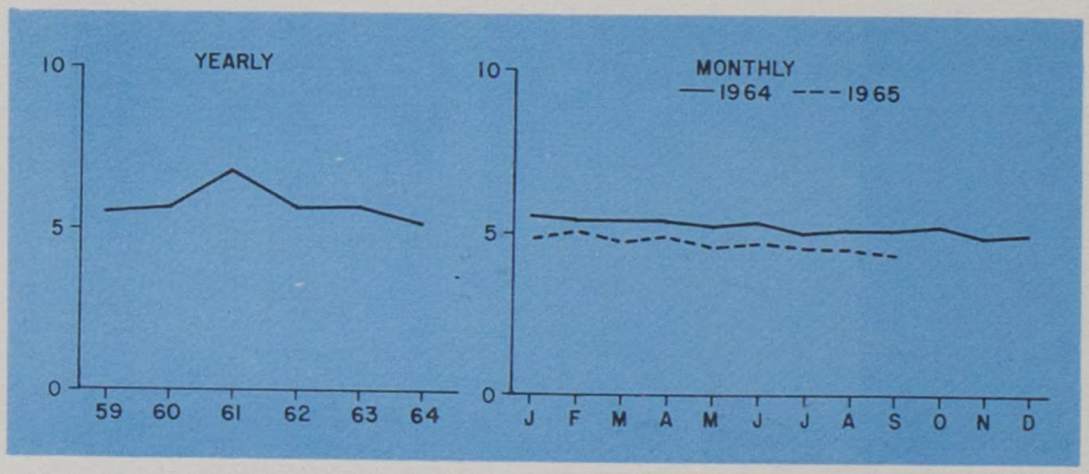
1957-59 = 100 — Seasonally adjusted



National Indicators —

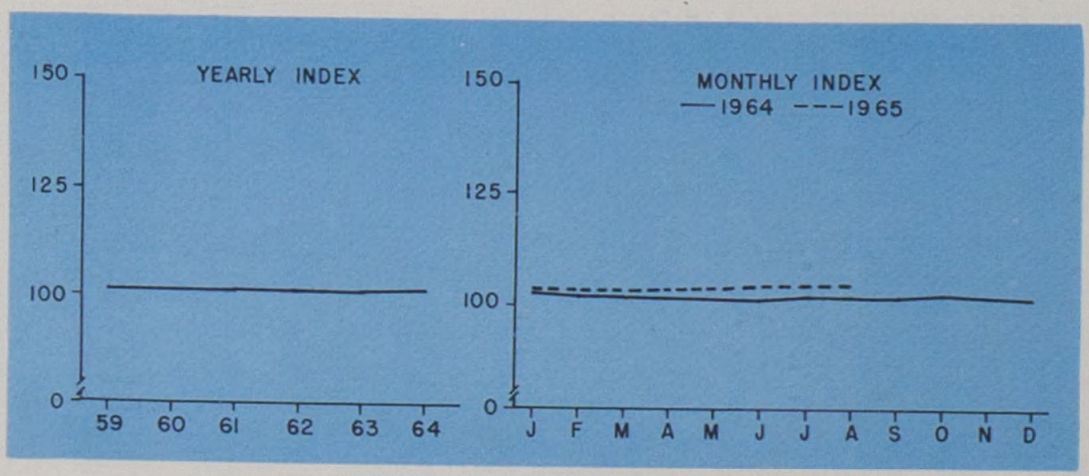
UNEMPLOYMENT AS % OF THE LABOR FORCE

Seasonally adjusted



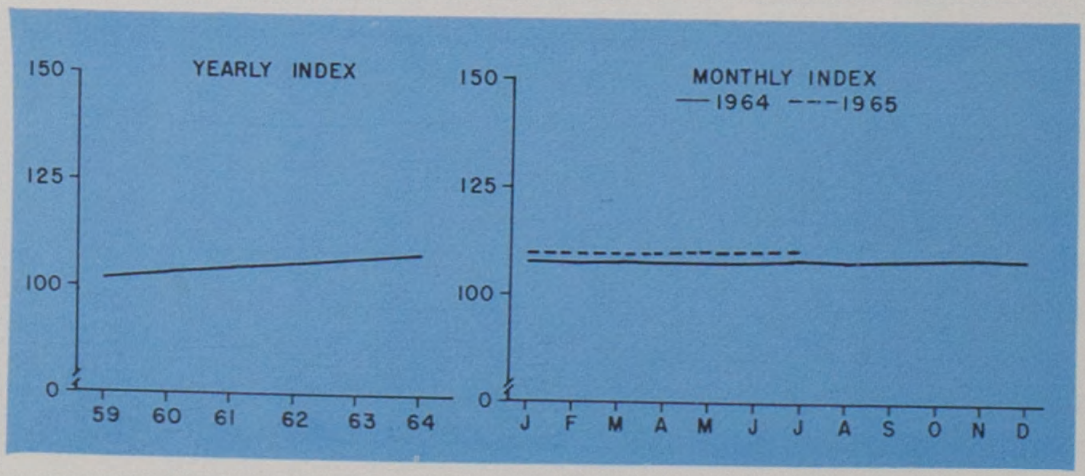
WHOLESALE PRICE INDEX

1957-59 = 100



CONSUMER PRICE INDEX

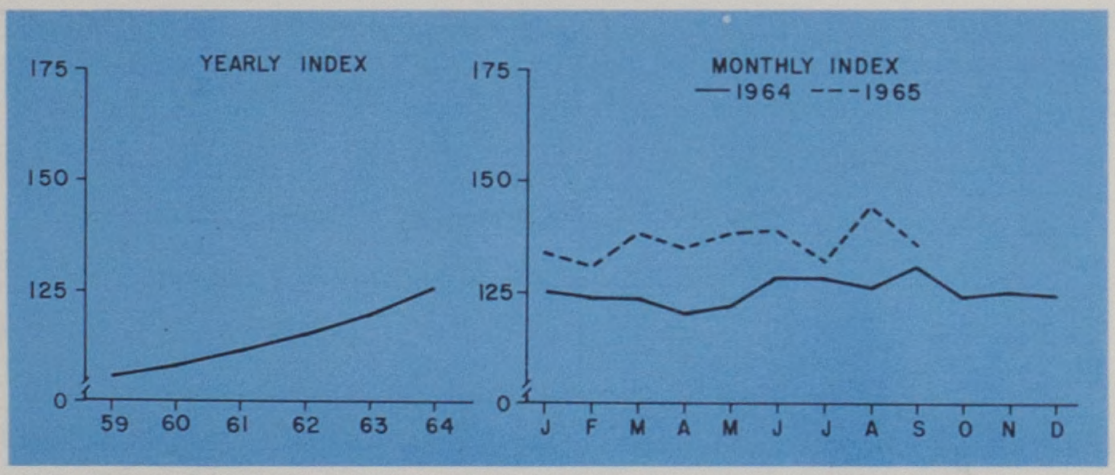
1957-59 = 100



Montana Indicators —

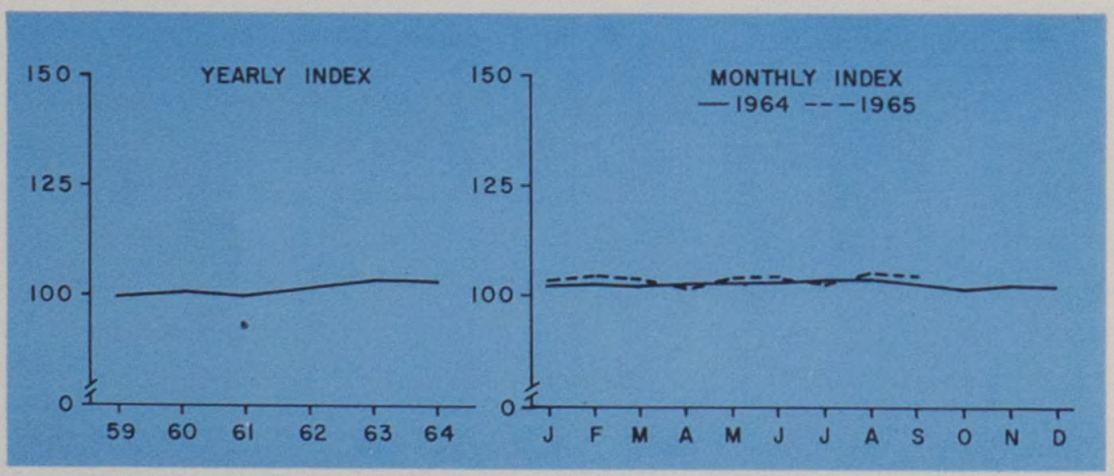
BANK DEBITS

1957-59 = 100 — Seasonally adjusted



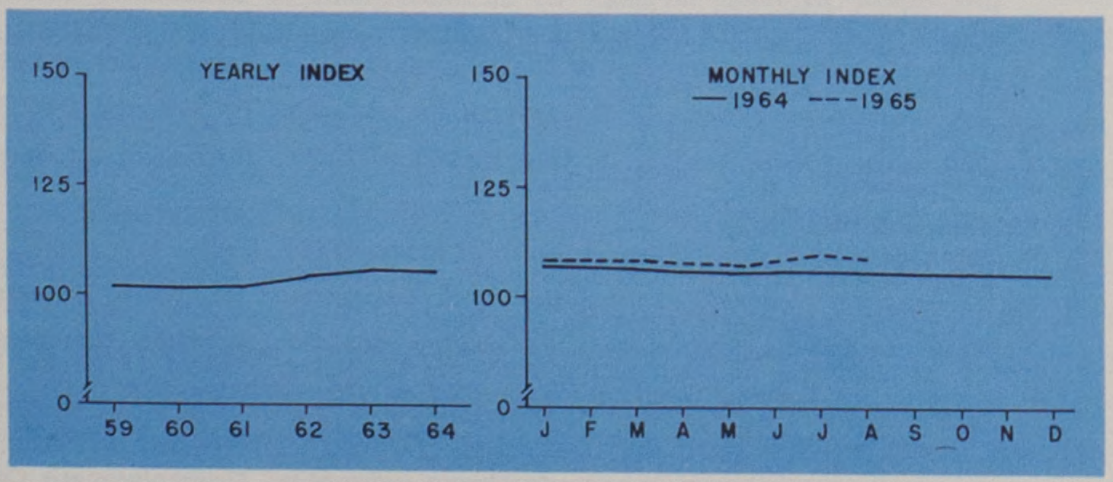
EMPLOYED WORK FORCE

1957-59 = 100 — Seasonally adjusted



NONAGRICULTURAL EMPLOYMENT

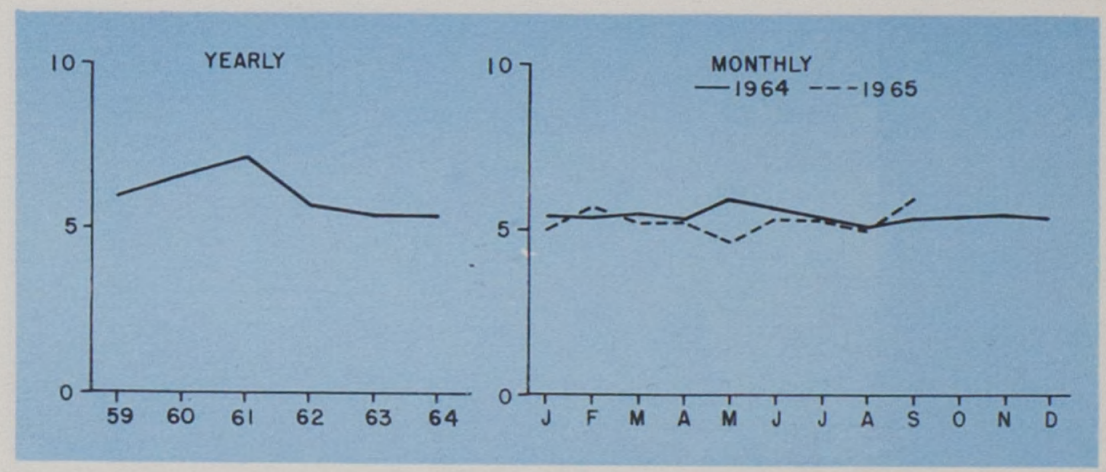
1957-59 = 100 — Seasonally adjusted



Montana Indicators —

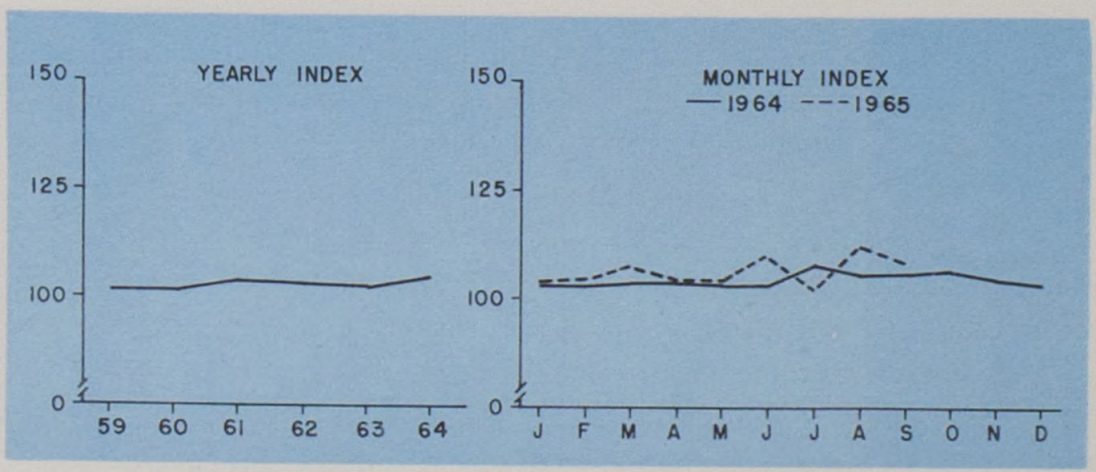
UNEMPLOYMENT AS % OF THE LABOR FORCE

Seasonally adjusted



AVERAGE WEEKLY HOURS, MANUFACTURING

1957-59 = 100 — Seasonally adjusted



SOURCES OF DATA

National Indicators

Gross national product: U. S. Department of Commerce, Office of Business Economics.

Disposable personal income: U. S. Department of Commerce, Office of Business Economics.

Industrial production: Board of Governors of the Federal Reserve System.

Unemployment as a percent of the labor force: U. S. Department of Labor, Bureau of Labor Statistics.

Wholesale price index: U. S. Department of Labor, Bureau of Labor Statistics.

Consumer price index: U. S. Department of Labor, Bureau of Labor Statistics.

Montana Indicators

Bank debits: Federal Reserve Bank of Minneapolis.

Employed work force: Unemployment Compensation Commission of Montana, in cooperation with the U. S. Department of Labor, Bureau of Labor Statistics. Excludes military.

Nonagricultural employment: Unemployment Compensation Commission of Montana, in cooperation with the U. S. Department of Labor, Bureau of Labor Statistics. Wage and salary workers only.

Unemployment as a percent of the labor force: Unemployment Compensation Commission of Montana, in cooperation with the U. S. Department of Labor, Bureau of Labor Statistics.

Average weekly hours in manufacturing industries: Unemployment Compensation Commission of Montana in cooperation with the U. S. Department of Labor, Bureau of Labor Statistics.

financial statements must be aware of the alternatives available and the consequent variations in balance sheet valuations and reported income figures. The independent certified public accountant attests to the reliability of the financial statements but remember, he limits his responsibility by informing the reader that the statements are presented *fairly* and in conformity with *generally accepted* accounting principles.

Evolution of Generally Accepted Accounting Principles

The body of accounting knowledge was loosely knit and ill-defined during the hundreds of years when accounting reports were submitted to management/owners of small enterprises. The growth of absentee ownership was accompanied by the need for more formalized financial reporting to stockholders who had no opportunity to observe the day-to-day operations of the company in which they held a financial interest. The first official recognition of the need for formalized reporting came about in 1862 with the passage of the British Companies Act. In substance, the law required the directors of corporations to appoint a committee of independent stockholders to audit the financial affairs of the company and to report annually to all the stockholders. It was not long before these committees turned to qualified auditors to report on the reliability of their company's financial affairs. Incidentally, the term *auditor* literally means "one who hears" and dates back to the time when accounts were read orally to interested owners or public officials.

Within a short time, the pioneers of the accounting profession in Great Britain recognized the need for the development of a more sophisticated body of accounting knowledge and proceeded to lay the foundation of what is now called generally accepted accounting principles. In 1917 the Federal Reserve Board in the United States called for accountants' certification of financial statements prepared in support of companies whose commercial paper was to be re-discounted by the Federal Reserve Banks. The American Institute of Certified Public Accountants prepared a memorandum entitled "Uniform Accounting: A Tentative Proposal Submitted by the

Federal Reserve Board." The statement was accepted by the Board and published under their auspices. This document served as a landmark in the United States since it represented the first formalized attempt to categorize accounting knowledge so that financial statements might be prepared with some semblance of standardization.

After further consultation with the American Institute of CPAs, a revised memorandum, "Verification of Financial Statements," was published by the Federal Reserve Board in 1929. The fact that this second memorandum was published in that fateful year of 1929 was pure coincidence. The effects of the stock market crash and the ensuing economic debacle did not exert any pressure on the accounting profession until a few years later. Substandard reporting on the financial affairs of corporations listed on the nation's stock exchanges did finally touch the conscience of the accounting profession and stock exchange officials by 1933. In that year a Special Committee on Co-operation with Stock Exchange of the American Institute began a series of meetings with the Committee on Stock List of the New York Stock Exchange in order to strengthen the accounting and reporting standards of listed corporations. One of the major proposals finally submitted by the Institute committee and accepted by the Exchange was to allow every corporation to choose its own methods of accounting within reasonably broad limits but to require disclosure of the methods employed and to insist upon consistent application from year to year. The Institute further proposed the development and publication of certain broad principles which were to be adopted by listed corporations. These principles were to be based upon standards already accepted by the majority of professional accountants—which were relatively few in number at the time. In designing an audit certificate to accompany audited financial statements, the phrase "accepted principles of accounting" was initially chosen. Later, the word "generally" was added to this phrase and is still in use today.

> The fundamental framework of accounting which the committee established has guided the development of accounting for thirty years. The recommendations were not fully implemented, but the basic concept which permitted each corporation to choose those methods and procedures which were most

> appropriate for its own financial statements within the basic framework of 'accepted accounting principles' became the focal point of the development of principles in the United States.[1]

In spite of the progress made at that time, it is unfortunate that corporations never really outlined the particular accounting methods they chose to follow and the number of generally accepted principles has grown enormously over the years.

A review of the forces that stimulated improvements in financial reporting during the thirties would be incomplete without recognizing the impact of the Securities Act of 1933 and Securities Exchange Act of 1934. In retrospect it is easy to visualize the limitations that could have been imposed on the accounting profession and financial community by the newly created Securities and Exchange Commission. The Commission had the power (and still does for that matter) to severely restrict the way in which financial statements were to be prepared and could have rigidly prescribed the accounting systems upon which they were based. Many people shudder to this day, and with justification, at the possible implications. Fortunately, the SEC adopted a wait-and-see attitude toward the accounting profession and listed corporations. "Clean your own house, or we'll do it for you," seemed to be the philosophy followed by the Commission. As noted above, the American Institute of CPAs and the New York Stock Exchange were already engaged in their house-cleaning activities and further progress was to be made in the next few years.

Relations between the SEC and the accounting profession have been very amicable all through the years in spite of the latent power the Commission has and does possess. The Commission has issued numerous regulations in an attempt to spell out accepted accounting principles to be followed in reporting to stockholders but in almost all cases such pronouncements have been issued only after consultation with the Institute. In most instances the official position taken by the SEC has paralleled the views of the accounting profession. Although there have been some differences of opinion, they are not of major proportions, and accounting and reporting standards have by

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[1]Reed K. Storey, "The Search for Accounting Principles," American Institute of Certified Public Accountants, New York, 1964, p. 12.

no means been forced into a narrow set of regulations handed down by government fiat.

By the end of the 1930's the effort to carry out some of the earlier recommendations of the Special Committee on Co-operation with Stock Exchange crystalized in the formation of the Committee on Accounting Procedure of the American Institute. Rather than attempt to prescribe a formal body of accounting principles, however, the committee decided to use a piecemeal approach. Rightly or wrongly it was believed that more progress could be made by dealing with specific problems as they arose.

During the next twenty years this committee issued fifty-one "Accounting Research Bulletins" involving a varied assortment of accounting principles. These fifty-one bulletins by no means represented the entire body of accepted accounting procedures. Instead they served to clarify proper accounting treatment in specific areas where controversies had developed or where current practice had been so broad as to be hopelessly confusing. Although the title of the bulletins contained the word research, such research was confined primarily to broad observations of current practice. In most instances, the final decision of the committee was influenced by whatever particular method had predominated in practice. Very often two or more alternative methods were recommended whenever they could be defended on the grounds of acceptable practice. While it may be easy to criticize the work of this committee during its twenty-year life, it must be recalled that it was the first body of its kind in the accounting profession. Today, more advanced methods of dealing with accounting principles are needed; nevertheless, the committee can boast of some solid achievements—particularly in its successful efforts to limit to some extent the numerous alternative treatments that were possible in preparing financial statements and reporting to stockholders.

During this same ten-year period the American Accounting Association, composed primarily of accounting academicians, lent its voice to the development of accounting principles. Rather than deal with specific problems as the Institute committee did, it used a conceptual approach in an attempt to develop basic standards covering the entire field of financial accounting. Since the Institute's approach was practice-orien-

ted, it was not surprising to find several areas of conflict. Furthermore, most practicing CPAs were members of the Institute and not affiliated with the Association. Consequently the American Accounting Association has had very little influence on the way accounting principles are used in practice.

In many respects the decade of the thirties can be likened to a renaissance in accounting. The period was one of vigorous activity and marked the first concentrated effort to improve accounting and reporting standards. The war years and the immediate post-war era were relatively quiet; any changes in accounting methods involved the special problems brought about by defense contracts and renegotiations with the Federal government.

The Second Renaissance

A new intensified drive to improve accounting and reporting practice is evident today. Continued economic growth coupled with the added complexity of business organizations and federal income tax regulations have inevitably increased the mass of generally accepted accounting principles. More and more stockholders, managers, and governmental agencies today rely on financial reports, yet interpretation of these reports is hampered by an inability to make intelligent comparisons among different firms. "Many of the decisions by investors, managements, creditors and other users of financial statements are based on comparisons and analyses of trends, ratios of one entity with another, one period with another, or one entity with predetermined bench marks,"[2] says George Catlett in the *Journal of Accountancy.* Mr. Catlett goes on to add that investors require uniformity in financial statements among several companies for the same reason that managers need consistency in the application of accounting principles from one year to the next in their own company. Despite the fact that the accounting profession strives continually to narrow the areas of acceptable accounting principles, this objective has not yet been achieved.

Tracing the early development of accounting standards

[2]George C. Catlett, "Controvery Over Uniformity of Accounting Principles," *Journal of Accountancy,* December 1964, p. 40.

helps to explain why this goal has been so elusive. As mentioned earlier, in the thirties when the Special Committee of the Institute met with the Committee on Stock List of the New York Stock Exchange, the Special Committee recommended that listed corporations be free to choose their own method of accounting within reasonably broad limits but that financial statements be consistent from year to year and fully disclose the methods followed. Disclosure and consistency have therefore been essential elements of financial reporting for many years and have been used as an excuse for putting less emphasis on uniformity. While fully detailed methods of accounting would be meaningless to most readers of financial statements, it is unfortunate for the profession that the few disclosures made are buried in the highly technical jargon of footnotes.

As the complexity of carrying on corporate enterprise accumulates and new accounting problems arise, it becomes increasingly difficult to force corporations into a narrow area of financial reporting, particularly if the methods they choose tend to reflect fairly their operations. As a result official support from the American Institute of CPAs for alternative treatment has sometimes been expanded rather than contracted, often at the insistence of corporate management.

The pricing of inventories is an outstanding example of the official sanctioning of alternative methods. The Committee on Accounting Procedure of the American Institute took the position that almost any reasonable method of pricing inventories would be acceptable. To quote from their official statement:

> Cost for inventory purposes may be determined under any one of several assumptions as to the flow of cost factors (such as first-in first-out, average, and last-in first-out); the major objective in selecting a method should be to choose the one which, under the circumstances, most clearly reflects periodic income.[3]

With an almost unbroken rise in the price of raw materials over the past twenty years, significant differences will result

[3]Accounting Research Bulletin No. 43, Chapter 4, American Institute of Certified Public Accountants, New York, 1961, p. 29 (originally published in 1947).

in the financial statements of a company which reports consistently on the Fifo (first-in, first-out) basis as compared to one using Lifo (last-in, first-out). With Lifo, balance sheet valuations of inventories could conceivably be reported at 1945 prices whereas Fifo methods would result in a reflection of current prices. Working capital and current ratios naturally would differ materially depending on the pricing method used. Assuming a steady rise in prices over the past twenty years, reported profits would have been much higher for the company pricing its inventories at Fifo as contrasted to the one using Lifo. Many convincing arguments can be presented in support of either method but the confused user of financial statements might well ask whether both can be right.

A more recent example of dual treatment involves the "investment credit." Provision for this credit was included in the Revenue Act of 1962 which permitted a specified percentage reduction in a company's income tax as a result of acquiring certain depreciable assets after 1961. The Accounting Principles Board (successor to the Committee on Accounting Procedure) faced the dilemma of whether reported net income should be increased in the year the tax credit arose or systematically spread over the life of the newly acquired asset. The Board's initial pronouncement is on record as follows:

> We believe that the interpretation of the investment credit as a reduction in or offset against a cost otherwise chargeable in a greater amount to future accounting periods is supported by the weight of the pertinent factors and is based upon existing accounting principles.
>
> We conclude that the allowable investment credit should be reflected in net income over the productive life of acquired property and not in the year in which it is placed in service.[4]

Here was an unequivocal opinion that intended to restrict the handling of the investment credit so that all companies would report their income in a uniform manner. Fifteen months later, in March 1964, the Board felt it necessary to bow to the pressures of management and from many prominent members of the accounting profession, and retreated from its original position. In its Opinion No. 4 the Board stated in part:

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[4]Opinion No. 2, Accounting Principles Board, American Institute of Certified Public Accountants, New York, Dec. 1962, pp. 6, 7.

> The Board's review of experience since the issuance of Opinion No. 2 shows that the investment credit has been treated by a significant number of companies as an increase in net income of the year in which the credit arose.
>
> . . . the authority of Opinions of this Board rests upon their general acceptability. The Board, in the light of events and developments occurring since the issuance of Opinion No. 2, has determined that its conclusions as there expressed have not attained the degree of acceptability which it believes is necessary to make the Opinion effective.
>
> In the circumstances the Board believes that, while the method of accounting for the investment credit recommended in . . . Opinion No. 2 should be considered to be preferable, the alternative method of treating the credit as a reduction of Federal income taxes of the year in which the credit arises is also acceptable.[5]

The story would not be complete without adding that the attitude of the Securities and Exchange Commission also served to weaken the original stand taken by the Accounting Principles Board. In January 1963, the Commission issued Accounting Series Release No. 96 which recognized the "substantial diversity" of opinion in the matter of accounting for the investment credit and announced that they would accept financial statements prepared in either manner.

While this incident involving the investment credit is only an isolated case, it does serve to show that the problem of limiting alternative practices is not an easy one to solve. While this article cites only two examples of alternative methods, those of you who have occasion to study corporate financial statements well know that the complete list is a long one. Current thinking is finally challenging this concept of acceptable alternatives and although the profession cannot yet boast of many concrete accomplishments, some progress is evident.

The Quest for a New Approach

Perhaps the first step in the solution of any problem is an awareness that one exists. For many years now there has been an awareness on the part of the accounting profession that principles based primarily on practice are not necessarily sound and that a fresh approach requiring a more specific definition

[5]Opinion No. 4, Accounting Principles Board, American Institute of Certified Public Accountants, New York, March 1964, p. 22.

of accounting standards is desirable. There have always been some individuals who were dissatisfied with the methods used but the number of people now holding this opinion has grown considerably.

On the recommendations of a special committee of the American Institute, the Accounting Principles Board was organized in 1959 to succeed the old Committee on Accounting Procedure. More than a change in name was contemplated and only time will tell if the objectives of this new Board are to be fulfilled. Specifically this special committee proposed the organization of an Accounting Principles Board along with an accounting research staff. The Board was to be given sole authority to issue Opinions on matters affecting acceptable accounting principles after a review of the scientifically-oriented recommendations of the research staff. Whereas the old Committee on Accounting Procedure had adopted a piecemeal approach to the solution of isolated problems, the Board, in conjunction with its research staff, is to study the entire area of accounting and reporting standards in an attempt to narrow the areas of differences and inconsistencies in financial reporting.

The new Board was organized in 1959 and to date has submitted five Opinions (two of which have been cited above), while the research staff has published eight studies varying in content from a general inventory of presently accepted accounting principles to specific coverage of accounting for the cost of pension plans. Numerous other studies are in progress and will be released as they are completed; many of them will form the basis for future Opinions of the Board. Instead of confining its deliberations to members of the accounting profession, the Board has invited corporate managers, security analysts, bankers, and others to participate in any decision it may reach. Since so many other disciplines have a direct interest in financial statement preparation, it is appropriate that they have an opportunity to exert some influence on the Opinions of the Board.

In order to further enhance the authority of the new Board (partially as a result of the investment credit fiasco), the Institute adopted a resolution in 1964 which in effect requires a member to justify any departures from an Opinion of the Board.

In the past it had been possible for a CPA, when attaching his name to financial statements, to use his own discretion in deciding whether to adhere to an accounting method prescribed by the Committee on Accounting Procedure or not. Very often the dictates of generally accepted practice took precedence over the Accounting Research Bulletins of this committee and it was not necessary for the CPA to qualify or disclaim an opinion in his report. Under the new resolution, if the accountant concludes that a particular principle he uses differs materially from an Opinion of the Board, he must either qualify, disclaim, or give an adverse opinion. If the accountant concludes that this particular principle has substantial authoritative support in practice, despite disagreement by the Board, he may issue an unqualified statement but is obligated to disclose the fact of departure from a Board Opinion. Such disclosure must either be in the accountant's report itself (certificate) or included in the footnotes to the financial statements. This ruling is not yet included in the Code of Professional Ethics but there is a strong likelihood that it soon will be. The ruling will then be even more effective and another step toward improving the comparability of financial statements will have been achieved.

Although the Accounting Principles Board has been in existence for six years, it has not yet functioned as decisively as many had hoped. The issue of financial statement comparability remains unsolved and no comprehensive statement embracing the entire area of accounting principles has yet been made. Acting on the recommendations of the executive body of the Institute, the president of the Institute again appointed a special committee to study the Opinions of the Accounting Principles Board. The committee, among other charges, was directed to review the matter of the status of Opinions of the Accounting Principles Board and the development of accounting principles and practices for reporting purposes. This special committee reported to the president of the Institute in May of this year (1965) reaffirming the original objective when the Board was first organized, of "moving toward the reduction of alternative practices in accounting . . ."[6] The Committee was realistic

[6]*Report of the Special Committee on Opinions of the Accounting Principles Board*, American Institute of Certified Public Accountants, New York, 1965, p. 16.

enough to acknowledge that complete elimination of alternative practices would be impossible and therefore elaborated on its recommendations by stating that

> . . . variations in treatment of accounting items generally should be confined to those justified by substantial differences in factual circumstances. [And that the Board should] set forth in its Opinions the criteria for application of such acceptable variations.[7]

Conclusions

If the American Institute of Certified Public Accountants can be looked upon as the official voice of the public accounting profession, then it is reasonable to assume that the day is fast approaching when there will be greater comparability in financial statements. The persistent reiteration by the Institute that the primary aim of the recently created Board should be one that will formulate an underlying set of accounting principles based upon formal logic rather than current practice is clear enough. A second but no less important objective is the reduction in alternative reporting practices. These goals will not be achieved in a few months or even the next couple of years, but advances in this direction are evident. If the present Board does not do the job, then another one will. Dire predictions have sometimes been made that if the accounting profession does not revamp the existing accounting structure, others will do it for them. The others referred to are usually the SEC or some agency of the Federal government. Judging by the progress that has been made over the past thirty years and particularly in the last five, such action seems unlikely as well as unnecessary.

Not everyone agrees that complete uniformity in accounting reports is desirable, nor should they. There will always be conditions under which certain alternative practices are essential to a fair presentation of a company's financial position. The following comment by Alvin Jennings, past President of the American Institute and current chairman of the Accounting Principles Board, best summarizes the conditions under which uniformity is desirable.

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[7] *Ibid.*, p. 16.

> The need is not for uniformity without regard to circumstances. Rather, it is the elimination of variations which cannot be justified by differences in circumstances, including, naturally, significant differences in basic facts or in the environment in which an applicable transaction occurs. This does not imply a single solution for every accounting problem. Nor does it require that in every case there must be two or more alternative choices.[8]

No final solutions to all of the problems of financial reporting are contemplated. As one problem is solved, another will arise to take its place. In a dynamic society, the process is as inevitable as night following day. The purpose of tracing the evolution of accounting principles has been to demonstate that the accounting profession is not static in its thinking but is aware of the constant need for change. Although progress in improving accounting and reporting standards may seem slow to many, the trend points inexorably in the direction of more uniformity in accounting principles accompanied by better comparability of financial statements.

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[8]Alvin R. Jennings, "Opinions of the Accounting Principles Board," *Journal of Accountancy*, August 1964, p. 31.

Taxpayer Compliance Costs from the Montana Personal Income Tax

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This is the third in a series of articles on taxation which Professor Wicks has written for the Quarterly. *The Spring 1965 issue included an article on "The Nature of Retail Sales Taxation." In the Summer 1965 issue, Dr. Wicks discussed some "Myths and Misconceptions about Montana's State and Local Taxes." In the following pages he considers another aspect of taxation: whether the compliance costs involved in Montana's personal income tax are too high or too low, or simply a necessary evil.*

One of the significant factors inherent in most forms of taxation is that the costs incurred in keeping necessary tax records and submitting returns and taxes to the government must be shouldered by the individual taxpayer. These costs are called taxpayer compliance costs. They are especially significant in the case of personal income taxation, for the provisions of this type of tax are usually quite complicated, and it is the taxpayer himself who computes his own tax liability. Since few people are made happy by having to prepare their income tax returns, it is generally accepted that the compliance cost should be kept to the minimum consistent with effective administration of the tax.

Background of the Montana Situation

The 1955 Montana Legislature effected major changes in the state's personal income tax. These changes altered the base—that is, the income subject to tax after all deductions and exemptions—of the Montana tax so as to conform very closely

to the base of the Federal income tax. As a result of these changes, Montana taxes the same amount of income of Montana residents, allows the same deductions, and specifies the same rules for computing the number of exemptions as does the Federal government with only a few exceptions. The major exceptions are that the state tax includes interest on state, county, or municipal bonds in the base and excludes interest on obligations of the Federal government and dividends from national banks situated in Montana, and that Federal income taxes paid are allowed as a deduction while Montana income taxes paid are not. There are also special provisions concerning income earned outside of the state.

Purpose and Design of the Study

The purpose of this article is to analyze to what degree the 1955 tax law lowered the compliance costs of the tax. The most accurate way of conducting such an analysis would be to compare these costs both before and after the changes; however, no information concerning the costs before the tax exists. Therefore, this article describes a statistical study of the compliance costs incurred by a sample of 106 Montana taxpayers because of the Montana income tax and compares these costs to the costs that the taxpayers incurred as a result of Federal personal income taxation. If these costs are low, it would suggest that the 1955 changes were effective in their goal of reducing taxpayer compliance costs. This suggestion would be especially strong if the Montana costs were only a small fraction of the costs of complying with the Federal tax. This is so, because if the state tax differed significantly from the Federal tax, the state returns would probably require different records and information than the Federal returns. Thus, the costs connected with the preparation of state returns could be expected to be a large percentage of the costs of complying with the Federal tax.

The basic information for this study was provided by questionnaires completed by the parents of 106 introductory economics students at the University of Montana. The 106 represented approximately one-third of those to whom questionnaires were submitted. These questionnaires supplied

information concerning the amount of time spent by these taxpayers in keeping records for and in preparing their Federal and their state personal income tax returns, the amount of money paid to anyone else for these purposes, the amount of Federal and state income tax paid during the average year of the past several years, and certain other items reported on their returns. From the amount of tax paid by each individual, his yearly income was estimated. Assuming that he worked a 40 hour week, 50 weeks per year, the value of one hour of his time was estimated by dividing his yearly income by 2,000. A minimum value of $2 per hour was assumed. This hourly figure was then multiplied by the time spent by the taxpayer on his Federal and on his state income tax to obtain a dollar estimate of its cost.

The parents of 50 different students were interviewed by telephone to determine whether those who returned the questionnaires had significantly different compliance costs than those who did not. These interviews indicated that the former group incurred greater costs than the latter in complying with the Federal but apparently not the state taxes. For this reason, when the collected data was used to obtain an overall estimate of the magnitude of Federal income tax compliance costs, appropriate adjustment was made to compensate for this bias in the data. Another source of bias which applied to both the state and Federal data resulted from the fact that, on the average, the parents of college students differ economically from the population in general. Specifically, among the parents of college students average income is higher, and professional, managerial, and self-employed occupations tend to predominate as compared to the population as a whole. The study shows that income and compliance costs are apparently not closely related, but that occupation and costs are. Therefore, appropriate adjustment was made for this sample bias when estimates of the average level of compliance costs were made from the data.

Results of the Study

There are probably two meaningful measures of the "average" level of compliance costs. One is the median and the other is the mean, or simple arithmetic average, of the costs.

The median cost is the middle cost on a list of everybody's costs ordered from highest to lowest, and the mean cost is the sum of the costs divided by the number of people. The study shows the median taxpayer compliance cost for the Montana personal income tax to be approximately $5.60; the mean is about $18.20. (See Table 1.) These cost figures were 10.9 percent median and 23.9 percent mean of the reported Federal tax compliance costs.

The mean is much larger than the median because a few taxpayers reported devotion of a very large amount of their time to record keeping and preparation of their state returns,

TABLE 1

APPROXIMATE TAXPAYER COMPLIANCE COSTS FROM THE MONTANA PERSONAL INCOME TAX

	Amount of Cost	Cost Compared to Compliance Cost of Federal Personal Income Tax	Cost Compared to Montana Income Tax Liability of Taxpayer
Median	$ 5.60	10.9%	7.0%
Mean	18.20	23.9	31.8

while the vast majority reported much smaller amounts of time spent and costs incurred. Since the figures concerning the amount of time spent were estimates, it is plausible that some of them were overstated. None of the information on the questionnaires of those taxpayers reporting exceptionally high amounts of compliance time suggests any reason why such an amount of time would be necessary. If the hypothesis that the time was overstated on these questionnaires is accepted, then the median provides a better measure of cost than the mean.

Conclusions

The dollar cost of complying with the state tax suggests that the 1955 changes in the tax law may have been quite successful in reducing compliance costs. The median compliance cost can be thought of as the typical cost. Considering the complexity of the personal income tax, $5.60 would seem to be quite a low figure. Comparison of the state with the Federal compliance costs seems to reinforce this conclusion concerning the ef-

fectiveness of the 1955 law. For the typical taxpayer, the state cost is only about 11 percent of the Federal. Even if the mean comparison figure of 24 percent is considered, the comparison is less than would be expected for a state income tax which was significantly different from the Federal tax.

These tentative conclusions are not meant to suggest that the compliance costs from the Montana tax are negligible or that there are no problems connected with them. The study showed the median amount of costs to be 7 percent of the taxpayer's Montana tax liability, and the mean figure was almost 32 percent. Even 7 percent is a high compliance cost for a tax, and to this must be added the cost to business firms of withholding the tax from employees' wages and remitting them to the government.

The costs affect different occupational groups differently. These different effects are shown by Table 2. The costs tend to be especially high for those who are self-employed. Such discrimination by type of occupation would probably be deemed to be unfair by many people. The study showed little, if any, statistically significant differences in compliance costs according to items which were deducted or type of income which could not be explained by the fact that the taxpayer was, or was not, self-employed.

Determining remedies for the problems of the magnitude of compliance costs or their unequal effect according to occupation is much more difficult than identifying the problems. Making the state tax even more like the Federal tax might be a solution. This could be accomplished by making the state tax simply some percentage of the taxpayer's Federal income

TABLE 2

TAXPAYER COMPLIANCE COSTS FROM THE MONTANA PERSONAL INCOME TAX BY OCCUPATIONAL CATEGORY

Occupational Category	Median Amount of Cost	Mean Amount of Cost	Median Cost as a Percentage of Tax Liability	Mean Cost as a Percentage of Tax Liability
Managerial	$ 5	$28	4.5	47.2
Professional	7	62	11.0	120.4
Other self-employed	13	44	13.5	85.9
Other white collar	5	5	11.0	14.9
Craftsmen	7	10	5.0	9.1
Other wage labor	3	11	5.0	15.2

tax liability, probably with some provision for adjustment for income earned outside the state. Alaska has such an income tax. However, even this step might provide little solution in addition to that apparently resulting from the 1955 changes, for the major remaining differences between the Montana and Federal taxes concerned deductions and certain special types of income. The study showed little significant relationship between the existence or absence of these items and compliance costs. It may be that material compliance costs are a necessary evil connected with personal income taxation.

The next issue of the Quarterly *will include another article by Dr. Wicks in which he discusses the various viewpoints from which taxes may be analyzed and reviews the major taxes imposed in the United States in terms of these viewpoints.*

Of Truck Drivers and Vice Presidents

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A front-page story in *The Wall Street Journal* early last summer asked the reader to picture the following incidents, if he could:

> "A matronly vice president gleefully participating in an old office sport by chasing a male secretary around a big leather-topped desk.
>
> "A black-jacketed truck driver skillfully maneuvering a giant rig into a dime-sized dock space—and then checking her lipstick in the rear-view mirror before hopping out."

"Ridiculous?" asked the *Journal.* "Maybe so." But the story went on to point out that the Civil Rights Act of 1964, which went into effect July 2, 1965, bars discrimination in employment because of sex as well as race. The *Journal* then discussed some of the misgivings which employers felt about the inclusion of women in the anti-discrimination bill.[1] At this writing, however, the Civil Rights Act has been in effect several months and there have been no reports of large numbers of American women demanding either truck drivers' jobs or vice presidencies. This is not surprising since it is probable that few women are aware that they were one of the minority groups included in the act. It is also unlikely that many women are anxious to invade predominantly male occupations such as truck driving; and, while a vice presidency may sound glamorous, there are all too few women qualified for top-level management positions.

Indeed, one of the facts seldom pointed out in the emotional articles about women which appear in the women's magazines is that employed women are overwhelmingly concentrated in the relatively less skilled, low paying, and less rewarding

[1] *The Wall Street Journal,* June 22, 1965, page 1.

fields of work. The proportion of women in positions of responsibility in this country is very small. If, for lack of a better measure, we use annual earnings as a criterion, we find that less than one-half of one percent of the employed women in the United States earned $10,000 or more in 1960. During the same year, 7 percent of all employed males were earning $10,000 or more. The percentages for Montana are almost exactly the same.[2] Obviously, some of this discrepancy, in both state and nation, is caused by the large number of women working only part time. But there are other reasons, too; women frequently receive less pay than men for the same kind of work and, unfortunately, relatively few women have the necessary training for high-paying positions.

Since women workers make up approximately one-third of the labor force in the United States, and 30 percent of Montana's labor force, this widespread lack of preparation for employment is distressing. This is especially so because women are expected to account for an increasingly large proportion of employment in this country and in our own state in the years to come. Of course, this is not a new trend; one of the interesting developments in Montana revealed by the *1960 Census of Population* was the fact that the growth of the state's labor force between 1950 and 1960 was accomplished entirely by an increase in the number of women workers. Approximately 73,400 women were at work or were seeking work in Montana in April 1960, 21,000 or 44 percent more than in April 1950. The national increase was only 35 percent. During the same decade the number of men in Montana's labor force actually declined by some 4,600 workers, or 2.5 percent.[3]

Who are these women and why are they working? Of the 73,000-plus women in the Montana labor force in April, 1960, about three-fifths were married women living with their husbands; one-fifth were widowed, divorced, or separated from their husbands; and one-fifth were single. About two-thirds of those employed were classified as clerical or sales workers, or as service employees (working as waitresses, cooks, private household workers, or in similar occupations). There were, of

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[2]U.S. Bureau of the Census, *1960 Census of Population, Vol. I, Characteristics of the Population.*

[3]*Ibid.*

course, a large number of elementary and secondary teachers and nurses, but only a sprinkling of other professional women. Some professional and business women, of course, have been highly successful; but they are the exception rather than the rule. Montana women work for a variety of reasons. Some find it necessary to support themselves and/or their children. Some work to supplement their husbands' incomes, or perhaps to send children to college. Many cite their own desire for useful and challenging occupations outside the home.

We have already noted the small number of employed women in the high income group (over $10,000 per year). The median (middle) income of all those Montana women who had worked *all year* in 1959 was reported by the 1960 Census to be $2,874. Over 5,300 employed women in the state were supporting families; of these almost one-half (48 percent) had incomes below the generally accepted "poverty level" of $3,000 per year. Because these figures are five years old, the number of women in each of these categories is probably larger today.

There is little doubt that more and more American women will continue to seek paid employment. This may be especially true in Montana, as rural families move to the cities where job opportunities for women are greater. Since this is the case, perhaps the time has come to be more realistic about the education of women for their role as income earners as well as wives and mothers. Of course, most young women will still marry and raise families. Some will never hold a job for pay, but statistics show that eight out of ten American women *will* be employed at some time during their lives.[4] Perhaps in our counselling of young women greater recognition should be given this fact. If women are going to work, surely their goal should be to find an occupation which fully utilizes their capabilities and provides some personal satisfaction. Counsellors and parents should also recognize that many of the unskilled and semi-skilled jobs which women traditionally have filled are going to be eliminated, or their numbers drastically curtailed, by technological changes.

Recently, there has been a great deal of interest in improving non-agricultural vocational and technical education in Mon-

[4] *American Women, Report of the President's Commission on the Status of Women, 1963.*

tana. In developing these new programs we must consider the needs of women—both the young woman in high school today and the older woman who may need further training in order to obtain employment. Many more women should be encouraged to attend our universities and colleges; the idea that higher education is wasted on a girl is simply archaic. And as counsellors and parents, perhaps we should stop to reflect, here in the mid-1960s, whether we do our exceptionally intelligent and ambitious young women a service when we suggest, for example, training as a medical technician rather than as a physician or as legal secretary rather than attorney, or when we imply that because they are women, we do not expect quite as much from them.

Historically, Montana has been a leader in providing for the political rights of women. Women were granted full voting rights in 1914 and the state sent the country's first woman representative to Congress in 1916. Perhaps it is time to turn our attention to greater efforts in providing women with the training necessary for economic independence. While Montana may not need women truck drivers and corporate vice presidents, it surely could use more skilled technicians and professional people in numerous fields. There is no reason why women should not fill many of these positions.